

The following Listing of Claims will replace all prior versions of claims in the application:

Listing of Claims

1. (Currently Amended) A method of supplying a plasma torch with at least one gas in which the volume flow of the at least one gas is controlled, the method comprising:

determining a desired composition of the at least one gas to be supplied to a plasma torch;
providing, from at least one gas source, a volume of the desired composition of the at least one gas to the plasma torch; ~~and~~

effecting volume flow control of the at least one gas to the plasma torch by using pressure control to adjust the level of the total volume of the at least one gas flowing through the plasma torch and using volume flow control to adjust volume flow portions producing the total volume flow of the at least one gas flowing through the plasma torch, thereby producing the desired composition of the at least one gas; and

controlling the at least one volume flow of the at least one gas on the basis of at least one of calorimetric measurement of the volume flow, measurement of the volume flow from differential pressure, and measurement of the pulse movement of the volume flow.

2. (Previously Amended) The method of claim 1 further comprising supplying the at least one gas as a mixed gas to the plasma torch.

3. (Previously Amended) The method of claim 1 further comprising supplying the at least one gas as a gas mixture to the plasma torch.

4. (Previously Amended) The method of claim 1 further comprising measuring the pressure of the at least one gas upstream of the plasma torch.

5. (Previously Amended) The method of claim 1 further comprising directly measuring the pressure of the at least one gas between an electrode and a nozzle in the interior of the plasma torch.

6. (Previously Amended) The method of claim 1 further comprising using at least one volume flow controller to effect volume flow control of the at least one gas, and measuring pressure of the at least one gas between the at least one volume flow controller and the plasma torch.

7. (Previously Amended) The method of claim 1 further comprising, using at least one volume flow controller to effect volume flow control of the at least one gas, and measuring pressures of individual gases of the at least one gas between the at least one volume flow

controller and the plasma torch and forming a mean pressure from measured pressures of individual gases.

8. (Previously Amended) The method of claim 1 further comprising combining individual gases of the at least one gas and measuring a resulting pressure.

9. (Previously Amended) The method of claim 1 further comprising combining at least two individual gases of the at least one gas and measuring a resulting pressure.

10. (Previously Amended) The method of claim 1 further comprising controlling the volume flow of a gas mixture of the at least one gas by controlling the volume flows of individual gases of the at least one gas.

11. ~~(Cancelled) The method of claim 1 further comprising controlling at least one volume flow of the at least one gas on the basis of calorimetric measurement of the volume flow.~~

12. ~~(Cancelled) The method of claim 1 further comprising controlling at least one volume flow of the at least one gas on the on the basis of the measurement of the volume flow from differential pressure.~~

13. ~~(Cancelled) The method of claim 1 further comprising controlling at least one volume flow of the at least one gas on the on the basis of a pulse movement.~~

14. (Previously Amended) The method of claim 1 further comprising supplying the plasma torch with an additional secondary gas that is controlled.

15. (Previously Amended) The method of claim 1, further comprising supplying the plasma torch with an additional secondary mixed gas that is controlled.

16. (Previously Amended) The method of claim 1 further comprising supplying the plasma torch with an additional secondary gas mixture that is controlled.

17. (Previously Amended) The method of claim 1 further comprising supplying the plasma torch with at least one additional secondary gas and effecting volume flow control of the at least one additional secondary gas by using pressure control to adjust the level of the total volume of the at least one additional secondary gas flowing through the plasma torch and using volume flow control to adjust volume flow portions producing the total volume flow of the at least one additional secondary gas supplied to the plasma torch, thereby producing the desired composition of the at least one additional secondary gas.

18. (Previously Amended) The method of claim 1 further comprising separately supplying the plasma torch, with at least one pre-flow gas at a controlled pressure before supplying the plasma torch with the at least one gas.

19. (Previously Amended) The method of claim 1 further comprising separately supplying the plasma torch with at least one post-flow gas at a controlled pressure after supplying the torch with the at least one gas.

20. (Previously Amended) The method of claim 1 further comprising supplying the at least one gas as at least one of plasma gas, plasma mixed gas, and plasma gas mixture.

21. (Currently Amended) An arrangement for supplying a plasma torch with at least one gas in which the volume of the at least one gas is controlled, the arrangement comprising:

at least one gas source for providing at least one gas to be supplied to the plasma torch;

at least one volume flow portion to produce a total volume flow of the at least one gas to the plasma torch; ~~and~~

an effected volume flow control for controlling volume flow of the at least one gas to the plasma torch, said volume flow control using pressure control to adjust the level of the total volume of the at least one gas flowing through the plasma torch, said volume flow control adjusting the volume flow portions producing the total volume flow of the at least one gas flowing through the plasma torch, thereby producing the desired composition of the at least one gas; and

said volume flow control controlling the at least one volume flow of the at least one gas on the basis of at least one of calorimetric measurement of the volume flow, measurement of the volume flow from differential pressure, and measurement of the pulse movement of the volume flow.

22. (Previously Amended) The arrangement of claim 21, the gas supplied to the plasma torch being a mixed gas.

23. (Previously Amended) The arrangement of claim 21, the gas supplied to the plasma torch being a gas mixture.

24. (Previously Presented) The arrangement of claim 21, the arrangement having a gas mixture delivery apparatus comprising:

at least one pressure measure, said pressure measure being responsive to the pressure of at least one of the volume flow portions;

at least one logic controller, said logic controller being responsive to said at least one pressure measure; and

at least one volume flow controller positioned to control volume flow of at least one of the volume flow portions.

25. (Previously Presented) The arrangement of claim 21 further comprising at least one pressure measure for directly measuring pressure of the at least one gas between an electrode and a torch nozzle in the interior of the plasma torch.

26. (Previously Presented) The arrangement of claim 21 further comprising at least one pressure measure for measuring pressure of each of said at least one volume flow portion.

27. (Previously Presented) The arrangement of claim 21 further comprising a single pressure measure for measuring pressure of all of said at least one volume flow portion.

28. (Previously Presented) The arrangement of claim 21 further comprising at least one pressure measure for measuring the pressure of each of said at least one gas.

29. (Previously Presented) The arrangement of claim 21 further comprising a single pressure measure for measuring the pressure of all of said at least one gas.

30. (Previously Presented) The arrangement of claim 21 further comprising a single pressure measure for measuring the pressure of at least two of said at least one gas that are combined.

31. (Previously Presented) The arrangement of claim 21 further comprising a separate volume flow controller for controlling the volume flow for each of said at least one gas.

32. (Previously Presented) The arrangement of claim 21 further comprising a separate volume flow controller for controlling the volume flow of each of said at least one volume flow portion.

33. (Previously Presented) The arrangement of claim 21 further comprising a secondary gas mixture delivery apparatus for supplying the plasma torch with at least one secondary gas that is controlled.

34. (Previously Presented) The arrangement of claim 21 further comprising a secondary gas mixture delivery apparatus for supplying the plasma torch with at least one secondary gas, said gas mixture delivery apparatus using an effected secondary volume flow control to control volume flow of the at least one secondary gas to the plasma torch, said secondary volume flow control using pressure control to adjust the level of the total volume of

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the at least one secondary gas flowing through the plasma torch, said secondary volume flow control adjusting the volume flow portions producing the total volume flow of the at least one secondary gas flowing through the plasma torch, thereby producing the desired composition of the at least one secondary gas.

35. (Previously Presented) The arrangement of claim 21 further comprising a pre-flow gas delivery apparatus for separately delivering at least one pre-flow gas to the plasma torch, the pressure of the at least one pre-flow gas being controlled.

36. (Previously Presented) The arrangement of claim 21 further comprising a post-flow gas delivery apparatus for separately delivering at least one post-flow gas to the plasma torch, the pressure of the at least one post-flow gas being controlled.

37. (Previously Presented) The arrangement of claim 21, the at least one gas being supplied as at least one of plasma gas, plasma mixed gas, and plasma gas mixture.